



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2012-1202; Directorate Identifier 2012-NE-38-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG (Formerly Rolls-Royce Deutschland GmbH, Formerly BMW Rolls-Royce GmbH) Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede existing airworthiness directive (AD) 2012-26-14 that applies to all Rolls-Royce Deutschland Ltd & Co KG (RRD) BR700-715A1-30, BR700-715B1-30, and BR700-715C1-30 turbofan engines. AD 2012-26-14 currently requires removal from service of the high-pressure (HP) compressor stages 1 to 6 rotor disc assembly before exceeding certain thresholds. Since we issued AD 2012-26-14, RRD developed a new silver-free nut that, if installed with a new HP compressor stages 1 to 6 disc assembly, would correct the unsafe condition identified in AD 2012-26-14. Therefore, we propose to supersede AD 2012-26-14 to restrict the applicability to engines exposed to silver plated nuts. Additionally, we are removing the terminating action statement from AD 2012-26-14 based on a comment received. This proposed AD would require removal from service of certain HP compressor stages 1 to 6 rotor disc assemblies before exceeding certain thresholds. We are proposing this AD to prevent failure of the HP compressor stages 1 to 6 rotor disc assembly, which could lead to an uncontained engine failure and damage to the airplane.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, Dahlewitz, 15827 Blankenfelde-Mahlow, Germany; phone: 49 0 33-7086-1200; fax: 49 0 33-7086-1212. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the MCAI, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Robert Morlath, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England

Executive Park, Burlington, MA 01803; phone: 781-238 7154; fax: 781-238 7199; email: [robert.c.morlath@faa.gov](mailto:robert.c.morlath@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2012-1202; Directorate Identifier 2012-NE-38-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

On December 27, 2012, we issued AD-2012-26-14, Amendment 39-17309 (78 FR 2195, January 10, 2013) (“AD 2012-26-14”) for RRD BR700-715A1-30, BR700-715B1-30, and BR700-715C1-30 turbofan engines. AD 2012-26-14 requires removal from service of the HP compressor stages 1 to 6 rotor disc assembly before exceeding certain thresholds. AD 2012-26-14 resulted from a report of silver chloride-induced stress corrosion cracking of the HP compressor stages 1 to 6 rotor disc assembly, identified during overhaul. We issued AD 2012-26-14 to prevent failure of the HP compressor stages 1 to 6 rotor disc assembly, which could lead to an uncontained engine failure and damage to the airplane. We set a separate compliance standard for engines operated under the Hawaiian Flight Mission. The different cycle limits are established because the

Hawaiian Flight Mission profile was sufficiently different from the normal flight profile as to affect the cyclic loading on the life limited parts.

#### **Actions Since Existing AD Was Issued**

Since we issued AD 2012-26-14, RRD released new part number (P/N) components as a design fix for the issue described above.

We gave the public the opportunity to comment on AD 2012-26-14. We received two comments. The following presents the comments received, and the FAA's response to each comment.

#### **Comments**

##### **Request to Include HP Compressor P/Ns in the AD**

Southwest Airlines (SWA) requested that we include the P/Ns of the affected HP compressor stages 1 to 6 rotor disc assemblies in this AD. The commenter provided no justification for this request.

We partially agree. We agree with revising the Applicability paragraph of this proposed AD because RRD developed new P/N silver-free nuts, which, if installed with a new HP compressor stages 1 to 6 rotor disc assembly, would correct the unsafe condition.

We disagree with identifying specific HP compressor stages 1 to 6 rotor disc assemblies because this proposed AD applies to all HP compressor stages 1 to 6 rotor disc assemblies that have had silver-plated nuts installed. We revised the Applicability paragraph to clarify that this proposed AD applies to all HP compressor stages 1 to 6 rotor disc assemblies that were installed using nuts, P/N AS44862 or P/N AS64367.

##### **Request to Clarify Parts Eligible for Installation**

SWA requested that we clarify paragraph (f) of AD 2012-26-14. The commenter stated that it is unclear if reinstalling disc assemblies having fewer cycles since new (CSN) than that required by paragraph (e) of AD 2012-26-14, is acceptable.

We agree. The intent of AD 2012-26-14 is to allow operation of the disc assembly up to the CSN specified in paragraph (e) of AD 2012-26-14. It is acceptable to reinstall disc assemblies that have fewer CSN than specified in paragraph (e) of AD 2012-26-14. Therefore, we removed the terminating action paragraph from this proposed AD.

### **Conclusion**

We reviewed the relevant data and considered the comments received.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would retain certain requirements of AD 2012-26-14. This proposed AD would change the Applicability paragraph to specify the P/N nuts associated with reduced life and would also change paragraph (f) by removing language concerning the terminating action. This AD requires removal from service of certain HP compressor stages 1 to 6 rotor disc assemblies before exceeding certain thresholds.

### **Costs of Compliance**

We estimate that this proposed AD would affect about 255 engines installed on airplanes of U.S. registry. We also estimate that it would take about 20 hours per engine to comply with this proposed AD. The average labor rate is \$85 per hour. Prorated parts life will cost about \$13,500 per engine. Based on these figures, we estimate the cost of this proposed AD on U.S. operators to be \$3,876,000.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator.

Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This proposed regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2012-26-14, Amendment 39-17309 (78 FR 2195, January 10, 2013), and adding the following new AD:

**Rolls-Royce Deutschland Ltd & Co KG:** Docket No. FAA-2012-1202; Directorate Identifier 2012-NE-38-AD.

#### **(a) Comments Due Date**

The FAA must receive comments on this AD action by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD supersedes AD 2012-26-14, Amendment 39-17309 (78 FR 2195, January 10, 2013).

#### **(c) Applicability**

This AD applies to all Rolls-Royce Deutschland Ltd & Co KG (RRD) BR700-715A1-30, BR700-715B1-30, and BR700-715C1-30 turbofan engines with high-pressure (HP) compressor stages 1 to 6 rotor disc assemblies that were ever installed using nuts, part number (P/N) AS44862 or P/N AS64367.

**(d) Unsafe Condition**

This AD was prompted by a report of silver chloride-induced stress corrosion cracking of the HP compressor stages 1 to 6 rotor disc assembly. We are issuing this AD to prevent failure of the HP compressor stages 1 to 6 rotor disc assembly, which could lead to an uncontained engine failure and damage to the airplane.

**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done.

(1) For BR700-715A1-30 turbofan engines operated under the Hawaiian Flight Mission only, remove the HP compressor stages 1 to 6 rotor disc assembly from service before exceeding 16,000 flight cycles since new (CSN) or before further flight after the effective date of this AD, whichever occurs later.

(2) For BR700-715A1-30, BR700-715B1-30, and BR700-715C1-30 turbofan engines (all flight missions except Hawaiian Flight Mission), remove the HP compressor stages 1 to 6 rotor disc assembly from service before exceeding 14,000 flight CSN or before further flight after the effective date of this AD, whichever occurs later.

**(f) Prohibition Statement**

After the effective date of this AD, do not install an HP compressor stages 1 to 6 rotor disk assembly into an engine, or an engine with an HP compressor stage 1 to 6 rotor disk assembly onto an aircraft, if the HP compressor stages 1 to 6 rotor disk assembly has ever been operated with nuts, P/N AS44862 or P/N AS64367, and has more CSN than specified in the applicable portion of the compliance section of this AD.



**(g) Definition**

For the purpose of this AD, flight cycles is defined as the total flight CSN on the HP compressor stages 1 to 6 rotor disc assembly, without any pro-rated calculations applied for different flight missions.

**(h) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19, to make your request.

**(i) Related Information**

(1) For more information about this AD, contact Robert Morlath, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238 7154; fax: 781-238 7199; email: [robert.c.morlath@faa.gov](mailto:robert.c.morlath@faa.gov).

(2) Refer to MCAI European Aviation Safety Agency AD 2012-0230, dated October 30, 2012. You may examine this MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2012-1202-0003>.

(3) For service information identified in this AD, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, Dahlewitz, 15827 Blankenfelde-Mahlow, Germany; phone: 49 0 33-7086-1200; fax: 49 0 33-7086-1212.

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on November 8, 2013.

Colleen M. D'Alessandro,  
Assistant Directorate Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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